UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/743,750	01/16/2001	Ichiro Azuma	0020-4802P	7730

2292 7590 11/20/2007

BIRCH STEWART KOLASCH & BIRCH
PO BOX 747
FALLS CHURCH, VA 22040-0747

EXAMINER	
FORD, VANESSA L	
ART UNIT	**PAPER NUMBER**
1645	

NOTIFICATION DATE	DELIVERY MODE
11/20/2007	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

Office Action Summary	Application No.	Applicant(s)	
	09/743,750	AZUMA ET AL.	
	Examiner	Art Unit	
	Vanessa L. Ford	1645	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *06 September 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-3,5-8,10,11 and 14-29* is/are pending in the application.

4a) Of the above claim(s) *1-3, 5-8, 10 -11 and 14-20* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *21-29* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *16 January 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's amendment filed September 6, 2007 has been entered. Applicant's arguments submitted with the Pre-Appeal Request filed May 18, 2007 are acknowledged. A Notice of Panel Decision from Pre-Appeal Brief Review was mailed July 6, 2007.Claims 1-3, 5-8, 10-11, 13-20 have been withdrawn from consideration as being directed to a non-elected invention. Claims 4, 9 and 12 have been canceled. Claims 27-29 have been added. Claims 21-29 are under examination.

Rejections Maintained

2. The rejection under 35 U.S.C. 102(b) is maintained for claims 21- 23 and 26 for the reasons set forth on pages 4-7, paragraph 5 of the Non-Final Office Action.

The rejection was on the grounds that Yamamura et al teach compositions comprising *Nocardia ruba* cell wall skeleton, squalene, a suspending agent and dispersing agent (see the Abstract). Yamamura et al teach that cell wall skeleton used in the invention can be derived from *Mycobacterium bovis* (column 2, lines 15-21). Yamamura et al teach the composition was prepared using suspending agents such as Tween and Span (surfactants) (column 2, lines 54-68). Yamamura et al teach oil attached cell wall skeleton around 5μ in diameter (column 4). The products of the prior art reference appear to be the same as the product claimed by the applicant because they appear to possess the same functional characteristics, i.e. oil-in-

water compositions comprising cell wall skeleton and oil (squalane). The purification or production of a product by a particular process does not impart novelty or unobviousness to a product when the same product is taught by the prior art. This is particularly true when properties of the product are not changed by the process in an unexpected manner. See In re Thorpe, 227 USPO 964 (CAFC 1985); In re Marosi, 218 USPO 289, 29222-293 (CAFC 1983); In re Brown, 173 USPO 685 (CCPA 1972). Even if applicant's product can be shown to be of higher purity than the product of the prior art reference, applicant's needs to show some unexpected and unique utility or property, such as unexpected biologically significant increase in specific activity with which the increased purity, greater stability and/or practicality or freedom from some restrictive element or adverse side effects inherent in the product preparations of the prior art or some other secondary consideration which the additional degree of purity imparts (to which there is a basis in the specification) to applicant's product in order to overcome the aspect of the product's purity is relied upon. Yamamura et al, anticipate the claimed invention.

Since the Office does not have the facilities for examining and comparing applicant's emulsion with the emulsion of the prior art, the burden is on the applicant to show a novel or unobvious difference between the claimed product and the product of the prior art (i.e., that the emulsion of the prior art does not possess the same material structural and functional characteristics of the claimed emulsion). See In re Best, 562 F.2d 1252, 195 USPQ 430 (CCPA 1977) and In re Fitzgerald et al., 205 USPQ 594.

It should be noted that Applicant did not submitted any arguments with the submission of the RCE and the claim amendment filed September 6, 2007.

The arguments of record (including the arguments set forth in Applicant's per-appeal request submission) have been addressed in the Non-Final Office action mailed January 18, 2007.

In view of all of the above, this rejection is maintained.

3. The rejection under 35 U.S.C. 102(b) is maintained for claims 21- 26 for the reasons set forth on pages 7-10 paragraph 6 of the Non-Final Office Action.

The rejection was on the grounds that Yarkoni et al teach oil-in-water emulsions comprising *Mycobacterium bovis* BCG cell walls, squalane and Tween (surfactant) (page 881). Claim limitations such as "wherein the emulsion is negative for agglutination reaction with lectin", "having an particle diameter of about 100 μm or less is homogeneously dispersed" and "wherein the particle diameter is about 25 μm" would be inherent in the teachings of the prior art. The products of the prior art reference appear to be the same as the product claimed by the applicant because they appear to possess the same functional characteristics, i.e. oil-in-water compositions comprising cell wall skeleton and oil (squalane). The purification or production of a product by a particular process does not impart novelty or unobviousness to a product when the same product is taught by the prior art. This is particularly true when properties of the product are not changed by the process in an unexpected manner. See In re Thorpe, 227 USPO 964 (CAFC 1985); In re Marosi, 218 USPO 289, 29222-293 (CAFC 1983); In re Brown, 173 USPO 685 (CCPA 1972). Even if applicant's product can be shown to be of higher purity than the product of the prior art reference, applicant's needs to show some unexpected and unique utility or property, such as unexpected biologically significant increase in specific activity with which the increased purity, greater stability and/or practicality or freedom from some restrictive element or adverse side effects inherent in the product preparations of the prior art or some other secondary consideration which the additional degree of purity imparts (to which there is a basis in the specification) to applicant's product in order to overcome the aspect of the product's purity is relied upon. Yarkoni et al anticipate the claimed invention.

Since the Office does not have the facilities for examining and comparing applicant's emulsion with the emulsion of the prior art, the burden is on the applicant to show a novel or unobvious difference between the claimed product and the product of the prior art (i.e., that the emulsion of the prior art does not possess the same material structural and functional characteristics of the claimed emulsion). See In re Best, 562 F.2d 1252, 195 USPQ 430 (CCPA 1977) and In re Fitzgerald et al., 205 USPQ 594.

It should be noted that Applicant did not submitted any arguments with the submission of the RCE and the claim amendment filed September 6, 2007.

The arguments of record (including the arguments set forth in Applicant's per-appeal request submission) have been addressed in the Non-Final Office action mailed January 18, 2007.

In view of all of the above, this rejection is maintained.

4. The rejection under 35 U.S.C. 102(b) is maintained for claims 21- 26 for the reasons set forth on pages 11-14 paragraph 7 of the Non-Final Office Action.

The rejection was on the grounds that Zbar et al teach compositions comprising BCG cell walls and mineral droplets (see the Abstract and pages 831-832). Zbar et al teach that the oil droplets of the prior art ranged from less than 1 μ to greater than 15 μ. Therefore, the claim limitation "the particle diameter of an oil droplet is 100 μm or less taught by the prior art. The claim limitation wherein the emulsion is negative for agglutination reaction with lectin" would be inherent in the teachings of the prior art. Claims limitations such as "(a) stirring a mixture of a Bacillus Calmette-Guerin cell wall skeleton, an oil, and an organic solvent to disperse the Bacillus Calmette-Guerin cell wall skeleton in the mixture; (b) evaporating off the organic solvent to form an oil wherein the Bacillus Calmette-Guerin cell wall skeleton is homogeneously dispersed, or an oil droplet wherein the Bacillus Calmette-Guerin cell wall skeleton is encapsulated in the oil; and then, (c) adding an aqueous solution containing a surfactant thereto, and emulsifying the mixture" are being viewed as process limitations. The products of the prior art reference appear to be the same as the product claimed by the applicant because they appear to possess the same functional characteristics, i.e. oil-in-water compositions comprising cell wall skeleton and oil. The purification or production of a product by a particular process does not impart novelty or unobviousness to a product when the same product is taught by the prior art. This is particularly true when properties of the product are not changed by the process in an unexpected manner. See In re Thorpe, 227 USPO 964 (CAFC 1985); In re Marosi, 218 USPO 289, 29222-293 (CAFC 1983); In re Brown, 173 USPO 685 (CCPA 1972). Even if applicant's product can be shown to be of higher purity than the product of the prior art reference, applicant's needs to show some unexpected and unique utility or property, such as unexpected biologically significant increase in specific activity with which the increased purity,

greater stability and/or practicality or freedom from some restrictive element or adverse side effects inherent in the product preparations of the prior art or some other secondary consideration which the additional degree of purity imparts (to which there is a basis in the specification) to applicant's product in order to overcome the aspect of the product's purity is relied upon. Zbar et al, anticipate the claimed invention.

Since the Office does not have the facilities for examining and comparing applicant's emulsion with the emulsion of the prior art, the burden is on the applicant to show a novel or unobvious difference between the claimed product and the product of the prior art (i.e., that the emulsion of the prior art does not possess the same material structural and functional characteristics of the claimed emulsion). See In re Best, 562 F.2d 1252, 195 USPQ 430 (CCPA 1977) and In re Fitzgerald et al., 205 USPQ 594.

It should be noted that Applicant did not submitted any arguments with the submission of the RCE and the claim amendment filed September 6, 2007.

The arguments of record (including the arguments set forth in Applicant's per-appeal request submission) have been addressed in the Non-Final Office action mailed January 18, 2007.

5. The rejection under 35 U.S.C. 112, second paragraph is maintained for claims 21- 26 for the reasons set forth on page 14 paragraph 8 of the Non-Final Office Action.

The rejection reiterated below:

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:
The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 21-26 are rejected under 35 USC 112 second paragraph for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 21, in particular recites "...crude particles...". The instant specification at page 18 discloses that "crude particles that are visible have usually a diameter of 100μm or more". Do all crude particles have usually a diameter of 100μm or more? What is meant by "crude particles"? Clarification and/or correction is required.

Applicant urges in the Pre-Appeal Request arguments that the phrase "crude particles" is defined on page 18 of the instant specification.

To address Applicant arguments submitted with the Pre-Appeal request regarding this rejection, it should be noted that the Examiner understands the accepted meaning of the terms "crude" and "particle". The Examiner has rejected the phrase "crude particles" because the instant specification does not define this phrase. It merely states "The crude particles that are visible have usually a diameter of about 100 μm or more". Is Applicant referring to BCG cell wall fragments? Clarification is requested.

New Grounds of Rejection

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 21-26 are rejected under 35 USC 112 second paragraph for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 21 recites "having a particle diameter of an oil droplet is 100 μm or less". The particle diameter is vague and indefinite because it has no lower limit. Would the lower limit be zero? What are the metes and bounds of the phrase "having a particle diameter of an oil droplet is 100 μm or less". Clarification and/or correction is required.

7. Claim 24 is rejected under 35 USC 112 second paragraph for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 24 recites "having a particle diameter of about 100 μm or less". The particle diameter is vague and indefinite because it has no lower limit. Would the lower limit be zero? What are the metes and bounds of the phrase "having a particle diameter of about 100 μm or less"? Clarification and/or correction is required.

8. Claims 27-29 are rejected under 35 USC 112 second paragraph for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 27, in particular recites "wherein the emulsion is dispersed without any particles that are visible and have a diameter of 100 μm or more". How can the particles have a diameter of 100 μm or more and they are not visible? What are the metes and bounds of the phrase "have a diameter of about 100 μm or more"? Clarification and/or correction is required.

9. Claims 27-29 are rejected under 35 USC 112 second paragraph for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 27, in particular recites have a particle diameter of an oil droplet is 100 μm or less". The particle diameter is vague and indefinite because it has no lower limit. Would the lower limit be zero? What are the metes and bounds of the phrase " have a particle diameter of an oil droplet is 100 μm or less"? Clarification and/or correction is required.

Since it is unclear by Applicant's claim language what they intend by the recitation of "wherein the emulsion is dispersed without any particles that are visible and have a diameter of 100 μm or more" (See paragraph 8 above) the claimed invention is unpatentable over Yarkoni et al.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

10. Claims 27-29 are rejected under 35 U.S.C. 103(a) as unpatentable over of Yarkoni et al *(Infection and Immunity, Kune 1980, p.881-886).*

Independent claim 27 is directed to an oil-in-water emulsion wherein the emulsion is dispersed without nay particles that are visible and have a diameter of 100 μm or more, negative for agglutination reaction with lectin, and a Bacillus Calmette-Guerin cell wall skeleton is encapsulated in an oil, and the particle diameter of an oil droplet is 100 μm or less, which emulsion is obtained by the following steps:

(a) stirring a mixture of a Bacillus Calmette-Guerin cell wall skeleton, an oil, and an organic solvent to disperse the Bacillus Calmette-Guerin cell wall skeleton in the mixture;

(b) evaporating off the organic solvent to form an oil wherein Bacillus Calmette-Guerin cell wall skeleton is homogeneously dispersed, or an oil droplet wherein the Bacillus Calmette-Guerin cell wall skeleton is encapsulated in the oil; then,

(c) adding an aqueous solution containing a surfactant thereto, and emulsifying the mixture, wherein the organic solvent is ethanol or toluene and wherein the oil is squalane.

Yarkoni et al teach oil-in-water emulsions comprising *Mycobacterium bovis* BCG cell walls and squalane (page 881). Claim limitations such as "wherein the emulsion is negative for agglutination reaction with lectin" would be necessarily taught by the prior art since the prior art teaches oil-in-water emulsions comprising *Mycobacterium bovis* BCG cell walls and squalane which are structurally the same as those of the claimed invention.

To address the claim limitations regarding process limitations, it should be note that the products of the prior art reference appear to be the same as the product claimed by the applicant because they appear to possess the same functional characteristics, i.e. oil-in-water compositions comprising cell wall skeleton and oil (squalane). The purification or production of a product by a particular process does not impart novelty or unobviousness to a product when the same product is taught by the prior art. This is particularly true when properties of the product are not changed by the process in an unexpected manner. See In re Thorpe, 227 USPO 964 (CAFC7 1985); In re Marosi, 218 USPO 289, 29222-293 (CAFC 1983); In re Brown, 173 USPO 685 (CCPA 1972). Even if applicant's product can be shown to be of higher purity than the product of the prior art reference, applicant's needs to show some unexpected and unique utility or property, such as unexpected biologically significant increase in specific activity with which the increased purity, greater stability and/or

practicality or freedom from some restrictive element or adverse side effects inherent in the product preparations of the prior art or some other secondary consideration which the additional degree of purity imparts (to which there is a basis in the specification) to applicant's product in order to overcome the aspect of the product's purity is relied upon.

Yarkoni et al do not specifically teach that dependent claim limitations "wherein the emulsion is dispersed without any particles that are visible and having a diameter of 100 μm or more" or " the particle diameter of an oil droplet is 100 μm or less".

It would be obvious to optimize cell wall particle size as well as oil droplet size.

Regarding the changes in size/proportion listed in the instant claims, MPEP 2144.04 states,

In re Rose , 220 F.2d 459, 105 USPQ 237 (CCPA 1955) (Claims directed to a lumber package "of appreciable size and weight requiring handling by a lift truck" where held unpatentable over prior art lumber packages which could be lifted by hand because limitations relating to the size of the package were not sufficient to patentably distinguish over the prior art.); In re Rinehart, 531 F.2d 1048, 189 USPQ 143 (CCPA 1976) ("mere scaling up of a prior art process capable of being scaled up, if such were the case, would not establish patentability in a claim to an old process so scaled." 531 F.2d at 1053, 189 USPQ at 148.).

In Gardner v. TEC Systems, Inc., 725 F.2d 1338, 220 USPQ 777 (Fed. Cir. 1984), cert. denied, 469 U.S. 830, 225 USPQ 232 (1984), the Federal Circuit held that, where the only difference between the prior art and the claims was a recitation of relative dimensions of the claimed device and a device having the claimed relative dimensions would not perform differently than the prior art device, the claimed device was *not patentably distinct* from the prior art device.

Thus, it would be *prima facie* obvious at the time the invention was made to modify the cell wall particle diameter and the oil droplet diameter in oil-in-water

emulsion as taught by Yarkoni et al et al because the MPEP at section 2144.04 discloses that where the only difference between the claimed invention and the prior art is relative dimensions but the two products perform same, the products are not patentability distinct. Thus, the modification of the oil-in-water emulsion would be a matter of optimizing experimental parameters as well as a matter of design choice. It would be expected, absent evidence to the contrary that the modification of the cell wall diameter and the oil droplet diameter would be provide an effective and stable product and would be unpatentable over the product of the prior art.

Status of Claims

11. No claims allowed.

Conclusion

12. Any inquiry of the general nature or relating to the status of this general application should be directed to the Group receptionist whose telephone number is (703) 308–0196.

Papers relating to this application may be submitted to Technology Center 1600, Group 1640 by facsimile transmission. The faxing of such papers must conform with the notice published in the Office Gazette, 1096 OG 30 (November 15, 1989). Should applicant wish to FAX a response, the current FAX number for the Group 1600 is (571) 273-8300.

Any inquiry concerning this communication from the examiner should be directed to Vanessa L. Ford, whose telephone number is (571) 272-0857. The examiner can normally be reached on Monday – Thursday from 9:00 AM to 6:00 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shanon Foley, can be reached at (571) 272-0898.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov./>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Vanessa L. Ford
Biotechnology Patent Examiner
November 7, 2007

NITA MINNIFIELD
PRIMARY EXAMINER